

Fig. 1 shows Raman spectra from two different regions. The relative intensity scales have been normalized to the same value for the highest peak in each spectra.

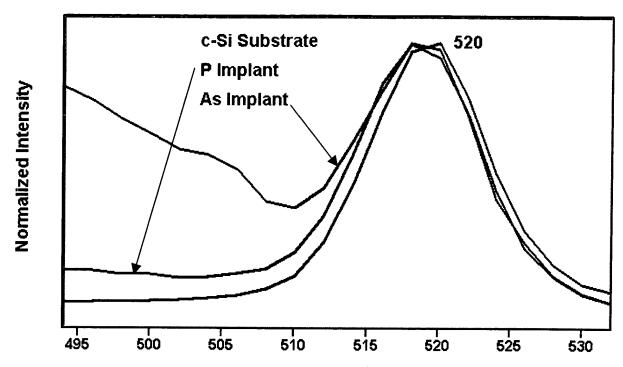


Fig. 2 shows Raman spectra from 490 to  $530~{\rm cm}^{-1}$  which are all normalized to the peak at  $520~{\rm cm}^{-1}$ .

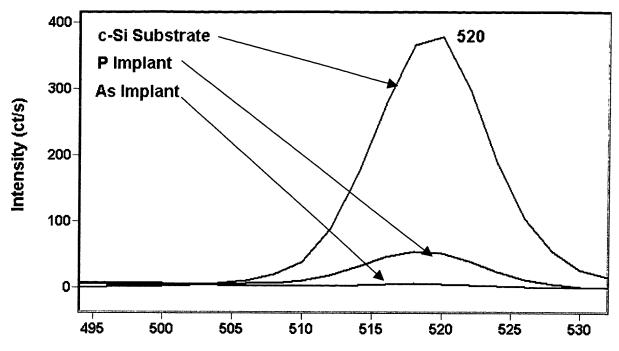
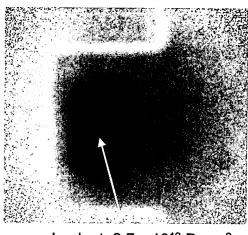


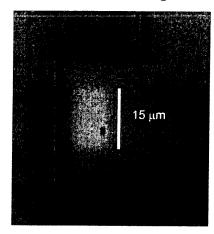
Fig. 3 shows Raman spectra of Fig. 2 plotted on the same scale.

## Raman Image of Ion Implanted Si

Raman Scattered Light at 520 cm<sup>-1</sup>

Reflected White Light



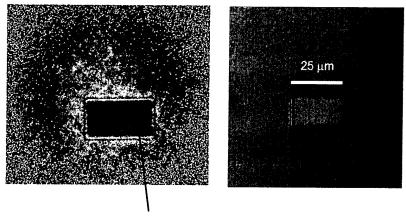


Implant: 2.7 x 10<sup>12</sup> P cm<sup>-2</sup>

Fig. 4 shows images of a portion of a silicon wafer with a 15 um high rectangular feature which has been implanted with  $2.7 \times 10^{12} \text{ cm}^{-2}$  phosphorus. The Raman image on the left uses the intensity of the  $520 \text{ cm}^{-1}$  Raman feature where white corresponds to the highest crystalline peak intensity and black to the absence of crystalline silicon.

## Raman Image of Ion Implanted Si

Raman Scattered Light at 520 cm<sup>-1</sup> Reflected White Light



Implant: 1.2 x 10<sup>12</sup> B cm<sup>-2</sup>

Fig. 5 shows images of a portion of a silicon wafer where the rectangular region 25 um wide is implanted with  $1.2 \times 10^{12}$  cm<sup>-2</sup> boron.

## Micro-Raman Spectra of Irregular Defect Region of As Implanted Si

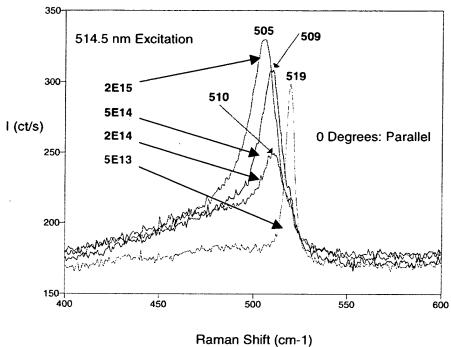


Fig. 6 shows Raman spectra of inclusions in silicon implanted with arsenic ions.

## Micro-Raman Sp ctra of Irr gular Defect Region of As Implanted Si

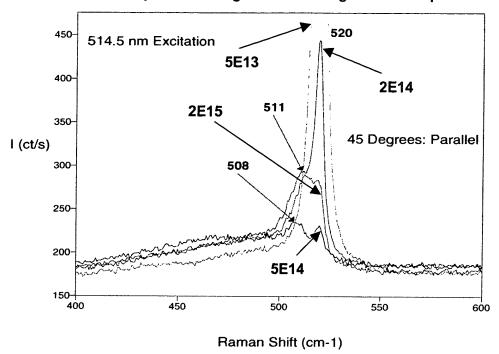


Fig. 7 shows Raman spectra of inclusions in silicon implanted with arsenic ions.

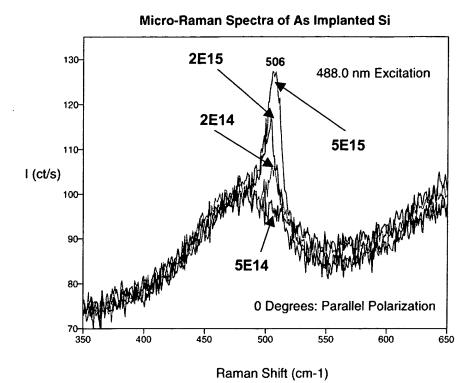


Fig. 8 shows Raman spectra of inclusions in silicon implanted with arsenic ions.

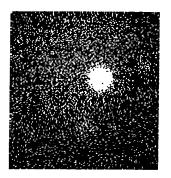


Fig. 9 shows a Raman image of a hexagonal phase inclusion in silicon.